FINAL PROJECT

A Rent Management System

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Background Information

➜ **270 Riverside Drive, New York, NY**
  ◆ 55 Units
    ● 27 Units → Owned by individual
    ● 28 Units → Owned by 270 Holding, LLC
  ◆ José Mercado – Part-time property manager

➜ **Units Ownership Type**
  ◆ 28 Units
    ● **Sold**
  ◆ 27 Units
    ● **Rent Controlled** (Government Agency)
    ● **Rent Stabilized** (Negotiation)
    ● **Market** (Only 1 Unit)

➜ **Special Case**
  ◆ Special → Monthly rent is 0 as compensation

USER PAIN POINTS

Create Bill

- Using spreadsheet
- Manually calculate single bill
- Manually track the balance

Record Payment

- Receive paper copies of checks
- Manually update spreadsheets

Full Building Report

- Manually generate spreadsheet
- Update all information

USER REQUIREMENTS

Automated Bill Generation

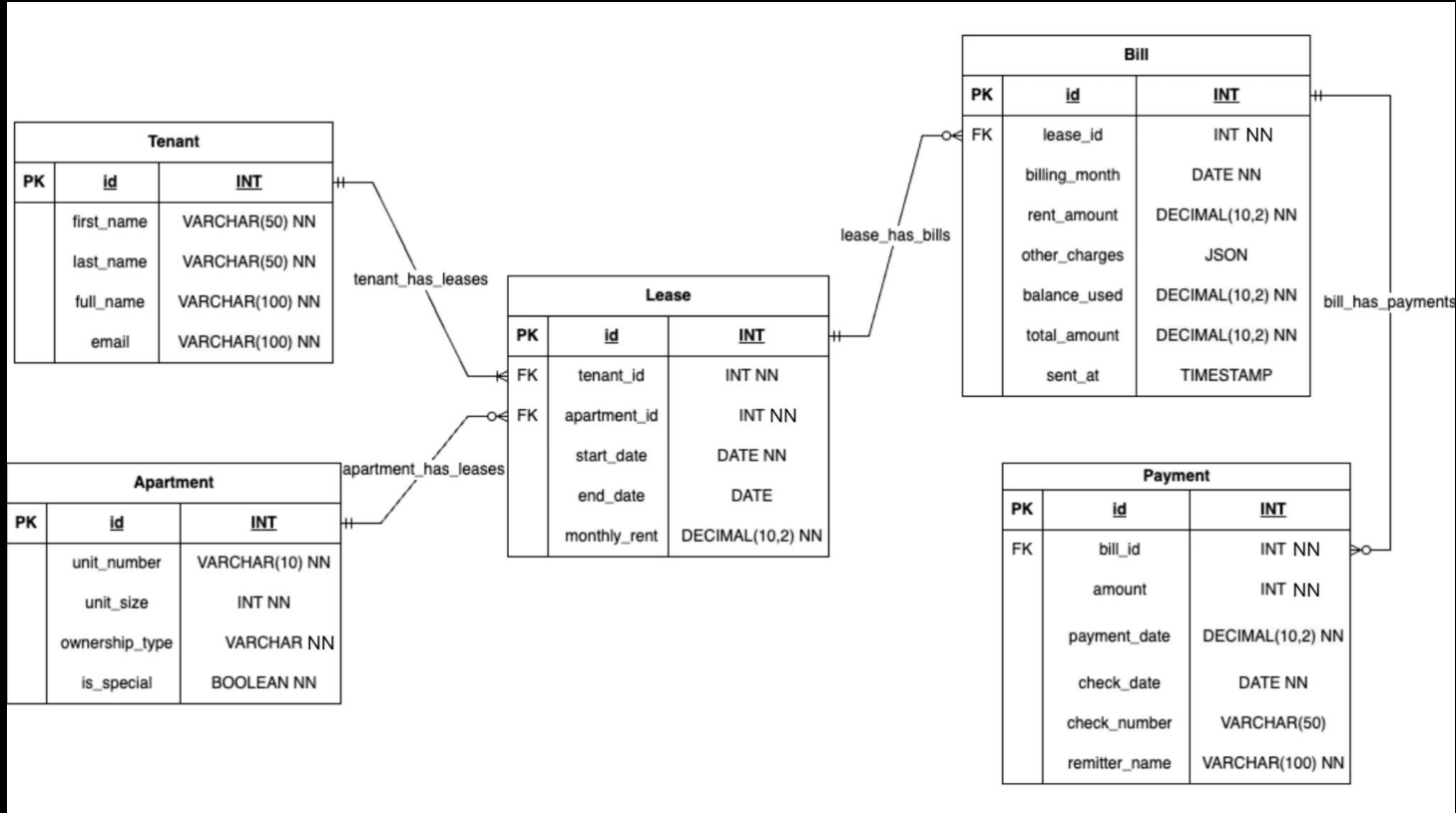- System calculation
- Itemize previous charges

Simplified Payment Entry

- System storage payment
- System update balance real-time

One-click Export

- Real-time Update
- Preview all unit information

ER Diagram (Crow's Foot Notation)

Tenant

PK	id	INT
	first_name	VARCHAR(50) NN
	last_name	VARCHAR(50) NN
	full_name	VARCHAR(100) NN
	email	VARCHAR(100) NN

Apartment

PK	id	INT
	unit_number	VARCHAR(10) NN
	unit_size	INT NN
	ownership_type	VARCHAR NN
	is_special	BOOLEAN NN

Lease

PK	id	INT
FK	tenant_id	INT NN
FK	apartment_id	INT NN
	start_date	DATE NN
	end_date	DATE
	monthly_rent	DECIMAL(10,2) NN

Bill

PK	id	INT
FK	lease_id	INT NN
	billing_month	DATE NN
	rent_amount	DECIMAL(10,2) NN
	other_charges	JSON
	balance_used	DECIMAL(10,2) NN
	total_amount	DECIMAL(10,2) NN
	sent_at	TIMESTAMP

Payment

PK	id	INT
FK	bill_id	INT NN
	amount	INT NN
	payment_date	DECIMAL(10,2) NN
	check_date	DATE NN
	check_number	VARCHAR(50)
	remitter_name	VARCHAR(100) NN

tenant_has_leases

apartment_has_leases

lease_has_bills

bill_has_payments

Database Schema

```sql
CREATE TABLE Apartment (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  unit_number TEXT NOT NULL,
  unit_size INTEGER NOT NULL,
  ownership_type TEXT NOT NULL CHECK (ownership_type IN ('sold', 'rent_controlled', 'rent_stabilized', 'market')),
  is_special BOOLEAN NOT NULL DEFAULT FALSE
);

CREATE TABLE Tenant (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  full_name TEXT NOT NULL,        You, 5 days ago • New Flask Project & Auto Database Generation
  email TEXT NOT NULL UNIQUE
);

CREATE TABLE Lease (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  tenant_id INTEGER NOT NULL,
  apartment_id INTEGER NOT NULL,
  start_date DATE,
  end_date DATE,
  monthly_rent DECIMAL(10,2),
  FOREIGN KEY (tenant_id) REFERENCES Tenant(id),
  FOREIGN KEY (apartment_id) REFERENCES Apartment(id)
);
```

Database Schema

```sql
CREATE TABLE Bill (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  lease_id INTEGER NOT NULL,
  billing_month DATE NOT NULL,
  rent_amount DECIMAL(10,2) NOT NULL,
  other_charges TEXT,
  balance_used DECIMAL(10,2) NOT NULL,
  total_amount DECIMAL(10,2) NOT NULL,
  sent_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  FOREIGN KEY (lease_id) REFERENCES Lease(id)
);

CREATE TABLE Payment (
  id INTEGER PRIMARY KEY AUTOINCREMENT,
  bill_id INTEGER NOT NULL,
  amount DECIMAL(10,2) NOT NULL,
  payment_date DATE NOT NULL,
  check_number TEXT,
  remitter_name TEXT NOT NULL,
  FOREIGN KEY (bill_id) REFERENCES Bill(id)
);
```